

ABSTRACT OF THE INVENTION

[0076] A process for providing a coating composition which, provides an abrasive resistant coating having a refractive index of the substrate and controlled tintability. The composition which, when applied to at least one surface of a substrate comprises an aqueous-organic solvent mixture containing a mixture of hydrolysis products and partial condensates of an epoxy-functional silane, a carboxylic acid functional compound selected from the group consisting of carboxylic acids, multifunctional carboxylic acids, anhydrides, and combinations thereof, a metal oxide composite colloid, a disilane and an effective amount of a leveling agent for permitting the aqueous-organic mixture to spread on the substrate and thereby provide substantially uniform contact of the aqueous-organic mixture with the substrate. The coating compositions may further include a mixture of hydrolysis products and partial condensates of one or more silane additives, a colloidal silica material , and a tetrafunctional silane.